SECURE RURAL SCHOOLS AND COMMUNITY SELF-DETERMINATION ACT OF 2000
PUBLIC LAW 110-343

TITLE II PROJECT SUBMISSION FORM
USDA FOREST SERVICE

Name of Resource Advisory Committee: Olympic Peninsula Resource Advisory Committee

Project Number (Assigned by Designated Federal Official):

Funding Fiscal Year(s): 2012

2. Project Name: Hood Canal Steelhead Project: Duckabush River wild steelhead supplementation and monitoring component[1]	**3a. State:** Washington **3b. County(s):** Jefferson County
4. Project Submitted By: Michael Schmidt, Director of Fish Programs, Long Live the Kings	**5. Date:** 3/28/2011
6. Contact Phone Number: (206) 382-9555 x27	**7. Contact E-mail:**mschmidt@lltk.org

8. Project Location: Requesting funding for Duckabush River activities.

Long Live the Kings (LLTK) also performs Hood Canal Steelhead Project monitoring activities in Jefferson County's Dosewallips and Little Quilcene Rivers.

a. National Forest(s): Olympic National Forest	**b. Forest Service District:** Hood Canal District

c. Location (Township-Range-Section)

Duckabush River (25 – 2 – 07, 16, 17, 18, 21) (25 – 3 – 01, 02, 03, 04, 09, 10, 12)	Other HC Steelhead Project activities occur in Jefferson C. in: *Dosewallips River* *(25 – 2 – 02, 03)* *(26 – 2 – 28, 29 ,30, 33,34)* *(26 – 3 – 14, 15, 16, 20, 21, 23, 24, 25, 48, 50)* *Little Quilcene River* *(27-1-19), (28 – 2 –34)* *(27 – 2 – 02, 03, 11, 13, 14, 18)*

9. Project Goals and Objectives:

- Answer critical questions about the benefits and risks of conservation hatchery programs and the life-history of steelhead.
- Recover – utilizing innovative supplementation techniques – the Endangered Species Act (ESA)-listed winter steelhead population in the Duckabush River *(As part of the greater Hood Canal Steelhead Project, also recover steelhead populations in the Dewatto and South Fork Skokomish rivers)*.
- (Adjunct Objective: Collect abundance and productivity information on the other salmon populations in the Duckabush River, including ESA-listed summer chum and Chinook.)

10. Project Description:

a. Brief: (*in one sentence*)

The Hood Canal Steelhead project is a 16-year study (2007-2023) to demonstrate and evaluate innovative

[1] While we are applying for funding for our activities on the Duckabush River, we also perform redd surveys on the Little Quilcene, Hamma Hamma, and Dosewallips rivers and life-history sampling on the Little Quilcene and Hamma Hamma rivers. We also rear steelhead for supplementing the Dewatto and Duckabush rivers and provide coordination support for the entire Hood Canal steelhead project.

supplementation techniques in Hood Canal where sufficient habitat exists to support much larger wild steelhead populations than currently survive.

b. Detailed:

Need

In 2007, NOAA Fisheries listed Puget Sound steelhead, including steelhead in Hood Canal, as "threatened" under the Endangered Species Act. Concurrently, WDFW has been developing a new steelhead management plan for Washington State. The management and recovery of steelhead require a solid understanding of the viability of steelhead populations, accounting not only for wild fish abundance, but also the effects hatchery-origin fish have on wild fish and the benefits and risks of utilizing hatcheries to help rebuild wild populations, also known as conservation hatchery programs.

Scientists (esp. Northwest Power and Conservation Council's Independent Scientific Advisory Board) have questioned whether conservation hatchery programs have aided in the recovery of wild salmon and steelhead populations. Existing programs cannot discount extraneous influences (e.g. harvest bans, habitat improvements) and do not have the history of post-supplementation monitoring necessary to conclude that the conservation hatchery programs have resulted in increased the abundance and productivity of wild salmon and steelhead populations. These scientists have concluded that a region-wide experiment involving multiple supplementation *and* non-supplemented control streams is required.

Overview

The Hood Canal Steelhead project is a one-of-a-kind steelhead supplementation experiment that: a) employs replication and controls over an entire region to answer critical questions about the benefits and risks of conservation hatchery programs and their effects on the life-history of steelhead; and b) simultaneously attempts to recover three Hood Canal steelhead populations to a point where they are self-sustaining. The project is a Hood Canal-wide expansion of the steelhead supplementation approach pioneered by Long Live the Kings (LLTK) and NOAA Fisheries on the Hamma Hamma River (1998-2008). It includes supplementation on three additional rivers (Duckabush, Dewatto, and South Fork Skokomish) with four rivers acting as controls (Tahuya, Little Quilcene, Big Beef Creek, and Dosewallips) *(map included as attachment 4)*. The Hamma Hamma River continues to serve as a post-supplementation indicator. The Hood Canal Steelhead Project is a massive partnership effort, including over 40 staff from 11 organizations/entities (NOAA Fisheries Service, Washington Department of Fish and Wildlife (WDFW), US Fish and Wildlife Service (USFWS), US Forest Service (USFS), Skokomish Tribal Nation, Point-No-Point Treaty Tribes, Port Gamble S'Klallam Tribe, Jamestown S'Klallam Tribe, Hood Canal Salmon Enhancement Group (HCSEG), Puget Sound Anglers – South Sound Chapter, and LLTK.

Hood Canal presents an ideal situation for conducting this research. Over-harvest has reduced the size of the Hood Canal steelhead populations to a point where they may not recover without intervention, and the existing habitat can sustain larger populations of steelhead. Precedent has also been set in Hood Canal by the Hamma Hamma Steelhead Project. On the Hamma Hamma River, the number of naturally spawning steelhead (wild-origin and hatchery-reared, wild fish) has increased from approximately 17 to over 100 annually. And in 2009, large schools of predominantly wild-origin steelhead were observed, a sign that the supplemented population is successfully producing wild offspring that are again returning to perpetuate the population.

The Hood Canal Steelhead Project follows the Before-After-Control-Impact experimental design to test whether supplementation affects the productivity or demographic, life-history, and genetic characteristics of natural steelhead populations. Both supplemented and control rivers are monitored for four years for baseline information "prior" to the contribution of hatchery-reared adults spawning in the supplemented rivers. Supplementation occurs for eight years, and then the rivers are monitored for an additional four years post-supplementation to assess long-term impacts.

Project Funding Request

LLTK is requesting funding for our Hood Canal Steelhead Project activities that take place from August 2012 through July 2013 on the Duckabush River, including: redd surveys, egg collection, hatchery-reared steelhead releases, smolt trapping, life-history monitoring, and acoustic tagging. LLTK's rearing of Duckabush and Dewatto steelhead at our Lilliwaup Hatchery; control stream monitoring activities on the Little Quilcene, Dosewallips, and Hamma Hamma Rivers; and project coordination and communication work are covered by other funding sources.

Title II project funding would continue to be used to help cover activities initially funded by the large grant LLTK received as project seed funding from MJ Murdock Charitable Trust (2007-2009). Murdock Trust funds supported our Duckabush activities through June 2009. In the summer of 2009, we received funding from the Laird Norton Family Foundation that helped support our Duckabush activities through July 2010, and in 2010 we received Title II fiscal year 2010 & 2011 funds that help support our work from August 2010 through July 2012.

Supplementation Activities

Egg Collection

From March through July, steelhead redds (nests) are identified on supplementation rivers during foot surveys, and fertilized eggs are pumped from those redds. Collecting naturally-spawned eggs ensures that the eggs collected for hatchery rearing were produced by adult fish capable of spawning successfully in the wild. It also allows processes like mate selection and competition for mates to occur naturally compared to the artificial selection that occurs when adults are collected and spawned as part of a traditional hatchery program. Egg collection often requires a team of four to five people. Approximately 15 trips are made each year to collect eggs.

Rearing and Release

The naturally spawned steelhead are then reared in similar conditions to and at the same pace as what they would experience in the wild, resulting in releases of predominantly two-year-old smolts. Some steelhead are also reared and released as four- and five-year-old adults to provide an immediate contribution to the naturally spawning populations.

Monitoring Activities

Redd Surveys

From February through June, sections of the supplementation and control rivers are surveyed on foot and by snorkeling one to two times per week for the presence of steelhead redds. Redd abundance can be used to estimate the number of steelhead returning to spawn. Typically, two to three people perform redd surveys together.

Smolt Trapping

From April 1st through the end of June, juvenile steelhead smolts are captured in rotary screw traps while migrating out of the river and into Hood Canal. Combined with redd abundance data, the number of smolts captured can be used to estimate productivity for each steelhead population. Genetic information is also collected by taking scale samples or removing portions of a fin. Juvenile chum, coho and Chinook that outmigrate during this time period are also gathered during these smolt trap checks, providing juvenile abundance and population productivity data for the Washington Department of Fish and Wildlife (WDFW). Smolt trap checks occur one to two times daily by one person.

Life History Monitoring

Growth rate, development stage, and genetic composition data are collected via hook-and-line sampling to monitor whether supplementation changes the relative abundance of anadromous steelhead versus resident steelhead (a.k.a. rainbow trout). In August, juvenile steelhead and/or rainbow trout from all project rivers are

collected. Throughout the year a limited number of adult resident steelhead (rainbow trout) are also collected. Typically, two to three people go on approximately 10-12 daily trips each year to hook-and-line sample.

Acoustic tagging

Each year a limited number of outmigrating smolts caught by the smolt traps are implanted with an acoustic tag. A network of acoustic receivers has been established at the mouth of each river, in Hood Canal and through the Strait of Juan de Fuca. Data collected from the receivers provides information regarding marine survival during the steelheads' first few weeks in the ocean.

Adjunct Work

In addition to the work performed for the Hood Canal Steelhead Project, LLTK collects abundance and productivity information on the coho, fall chum, ESA-listed summer chum, and ESA-listed fall Chinook populations in the Duckabush River. This requires that we operate the smolt trap from January 15th through the end of June. As described in the smolt trapping section above, we can collect some of the juvenile chum and Chinook that outmigrate if we operate the smolt trap during the steelhead migration window (April 1st through the end of June). However, we will miss the bulk of the chum outmigration and a portion of the coho outmigration unless we begin smolt trapping in mid-January. Historically, the Washington Department of Fish and Wildlife operated a smolt trap on the Duckabush River from January through the end of March. However, due to state budget cuts, they have had trouble affording to monitor the river during this time period.

11. Types of Lands Involved?
State/Private/Other lands involved? ☒ Yes ☐ No **Land Status:** Private, State, and Federal
If Yes, specify: In Jefferson County- State Lands, Olympic National Forest, Brothers Wilderness Area, and Private Lands adjacent to the Duckabush River are in the study area (defined by steelhead distribution in the river).

12. How does the proposed project meet purposes of the Legislation? (Check at least 1)
☐ Improves maintenance of existing infrastructure.
☒ Implements stewardship objectives that enhance forest ecosystems.
☒ Restores and improves land health.
☐ Restores water quality

13. Project Type

a. Check all that apply: (check at least 1)

☐ Road Maintenance	☐ Trail Maintenance
☐ Road Decommission/Obliteration	☐ Trail Obliteration
☐ Other Infrastructure Maintenance (specify):	
☐ Soil Productivity Improvement	☐ Forest Health Improvement
☐ Watershed Restoration & Maintenance	☐ Wildlife Habitat Restoration
☐ Fish Habitat Restoration	☐ Control of Noxious Weeds
☒ Reestablish Native Species	☐ Fuels Management/Fire Prevention
☐ Implement CWPP Project	☒ Other Project Type (specify): Steelhead abundance, productivity monitoring AND monitoring affects of supplementation. (Adjunct: chum, coho, and Chinook abundance and productivity monitoring)

b. Primary Purpose (select only 1): Reestablish Native Species

14. Identify What the Project Will Accomplish
Miles of road maintained: Not Applicable
Miles of road decommissioned/obliterated: Not Applicable
Number of structures maintained/improved: Not Applicable
Acres of soil productivity improved: Not Applicable
Miles of stream/river restored/improved: Not Applicable
Miles of fish habitat restored/improved: Not Applicable

Acres of native species reestablished: The Hood Canal Steelhead project's numerical goals for steelhead recovery are based upon the estimated carrying capacity of each supplementation stream. For the Duckabush River, the mean number of adult steelhead returning to spawn for the last ten years and the associated project goal are as follows: ***Current:*** 18 per year ***Goal:*** 200-429 per year[2].
Miles of trail maintained: Not Applicable
Miles of trial obliterated: Not Applicable
Acres of forest health improved (including fuels reduction): Steelhead carcasses provide nutrient enhancement to rivers and surrounding forests.
Acres of rangeland improved: Not Applicable
Acres of wildlife habitat restored/improved: Not Applicable
Acres of noxious weeds controlled: Not Applicable
Timber volume generated: Not Applicable
Jobs generated in full time equivalents (FTE) to nearest tenth. One FTE is 52 forty hour weeks: 1.1 FTE for Duckabush Activities (*3.8 FTE for all LLTK Hood Canal Steelhead Project Activities*)
People reached (for environmental education projects/fire prevention): Not Applicable
Direct economic activity benefit: Long-term economic benefits via fisheries and tourism
Other:

15. Estimated Project Start Date: Ongoing	**16. Estimated Project Completion Date:** Oct. 2023

[2] Current population status and recovery goals for the other two rivers that are part of the Hood Canal Steelhead Project: Dewatto River *Current*- mean of 28 per year *Goal*- 222-475 per year; South Fork Skokomish River *Current*- mean of 247 per year *Goal*- 1,035-2,221 per year.

17. List known partnerships or collaborative opportunities.

There are eleven entities participating Hood Canal Steelhead project activities across Hood Canal:

NOAA Fisheries
US Fish and Wildlife Service
US Forest Service
Washington Department of Fish and Wildlife
Skokomish Tribal Nation
Port Gamble S'Klallam Tribe
Jamestown S'Klallam Tribe
Point No Point Treaty Council
Hood Canal Salmon Enhancement Group
Long Live the Kings.
Puget Sound Anglers – South Sound Chapter

The following six partners contribute to the work performed on (or work associated directly with) the Duckabush River:

Long Live the Kings *(Stream Lead for Duckabush)*
Washington Department of Fish and Wildlife
US Fish and Wildlife Service
NOAA Fisheries
US Forest Service
Port Gamble S'Klallam Tribe

18. Identify benefits to communities.

Over the long term, the recovery of ESA-listed steelhead in Hood Canal could create fishing and wildlife viewing opportunities that currently do not exist. This could lead to increased tourist and fishing traffic in the Jefferson County and greater Hood Canal community when steelhead return in the late winter and spring, a time when vacation tourism and salmon fishing are not at their peak, which is summer and fall, respectively. The recovery of steelhead would also lead to improved ecosystem functioning, bettering community health. To the extent that listed species protections restrict or require additional permitting for activities regarding landowner property rights and county and state development or infrastructure repair, the recovery and delisting of winter steelhead in Hood Canal may also be beneficial to Jefferson County.

19. How does the project benefit federal lands/resources?

Benefits include: a) an increased understanding about the efficacy of conservation hatchery production as a tool for restoring wild steelhead and salmon populations, in Jefferson County, Washington State and all other areas to which salmon and steelhead return; b) the potential for recovery of listed steelhead populations; and c) improved ecosystem functioning. The restoration and maintenance of species diversity leads to greater ecosystem stability and preserves ecosystem complexity, both of which are beneficial to the health of forest lands.

20. What is the Proposed Method(s) of Accomplishment? (check at least 1)	
☒ Contract	☐ Federal Workforce
☐ County Workforce	☒ Volunteers
☒ Grant	☒ Agreement
☐ Americorps	☐ YCC/CCC Crews
☐ Job Corps	☐ Stewardship Contract
☐ Merchantable Timber Pilot	☐ Other (specify):

21. Will the Project Generate Merchantable Materials? ☐ Yes ☒ No

22. Anticipated Project Costs
a. Title II Funds Requested: $20,340
b. Is this a multi-year funding request? ☒ Yes ☐ No We are requesting funds for activities from August

2012 through July 2013.

23. Identify Source(s) of Other Funding:

The following funding sources support *all* Long Live the Kings Hood Canal Steelhead Project activities during the period of the funding request, not only those on the Duckabush River. Title II project funding would continue to be used to help cover our Duckabush activities.

NOAA Fisheries Annual Contract	May 2012-April 2013 pending (received in previous years)
US Fish and Wildlife Service Puget Sound Coastal Program Grant	January 2012-December 2013 pending (received in previous years)
Washington Department of Fish and Wildlife Aquatic Lands Enhancement Account Grant	July 2011-June 2013 applied in February 2011 (received in previous years)
Private donations	Ongoing

24. Monitoring Plan (provide as attachment - *See Attachment 3)*

a. Provide a plan that describes your process for tracking and explaining the effects of this project on your environmental and community goals outlined above.

b. Identify who will conduct the monitoring:

c. Identify total funding needed to carry out specified monitoring tasks (Worksheet 1, Item k):

25. Identify remedies for failure to comply with the terms of the agreement.

If project cannot be completed under the terms of this agreement:

☒ Unused funds will be returned to the RAC account.

☐ Other, please explain:

Project Recommended By:

/s/ (INSERT Signature)
Chairperson
Resource Advisory Committee

Project Approved By:

/s/ (INSERT Signature)
Forest Supervisor
National Forest

Attachment 1: Project Cost Analysis Worksheet

Worksheet 1

Please submit this worksheet with your proposal

FOR DUCKABUSH RIVER ACTIVITIES **August 2012-July 2013** (An example budget for all LLTK Hood Canal Steelhead Project activities is attached – see attachment 2) **Item**	*Column A* **Fed. Agency Appropriated Contribution**	*Column B* **Requested Title II Contribution**	*Column C* **Other Contributions**	*Column D* **Total Available Funds**
a. Field Work & Site Surveys				
b. NEPA/CEQA				
c. ESA Consultation				
d. Permit Acquisition				
e. Project Design & Engineering				
f. Contract/Grant Preparation	$ 200			$ 200
g. Contract/Grant Administration	$ 760			$ 760
h. Contract/Grant Cost				
i. Salaries	$37,000	$18,000	$ 5,000	$60,000
j. Materials & Supplies	$ 1,500		$ 3,000	$ 4,500
k. Monitoring	$ 5,000		$ 4,500	$ 9,500
l. Other (smolt trap contractor and intern)		$ 2,340[1]	$ 3,840	$ 6,180
m. Project Sub-Total				$81,140
n. Indirect Costs				
o. Total Cost Estimate		$20,340		$81,140

1. Funds for adjunct work: early season smolt trapping for chum and coho so that juvenile abundance and productivity data can be collected for all Duckabush River salmon populations.

NOTES:

a. Pre-NEPA Costs
g. Includes Contracting/Grant Officer Representative (COR) costs. Excludes Contracting/Grant Officer costs.
i. Cost of implementing project
l. Examples include overhead charges from other partners, vehicles, equipment rentals, travel, etc.
n. Contracting/Grant Officer costs, if needed, are included as part of Indirect Costs.

Attachment 2: Budget for all LLTK Hood Canal Steelhead Project Activities

Long Live The Kings - 2012 Budget ***Hood Canal Steelhead Project*[1]**	
Expenses:	
Salaries & Benefits	**$290,000**
Professional Fees	**$5,000**
Supplies	**$15,000**
Telephone & Communications	**$2,650**
Occupancy	**$13,500**
Equipment Repair & Maintenance	**$800**
Vehicle Expense	**$1,500**
Travel & Meetings	**$5,000**
Professional Development	**$500**
Special Events	
Capital Acquisitions	**$1,000**
Other Expense/Contingency	**$4,000**
Total	***$338,950***

1. Assume 2013 budget to remain relatively the same.

Attachment 3: Monitoring Plan

a. Provide a plan that describes your process for tracking and explaining the effects of this project on your environmental and community goals outlined above.

The Hood Canal Steelhead Project is an experiment, with monitoring built in to determine whether supplementation is leading to the recovery of wild steelhead, having no effect, or negatively impacting populations. The study compares the abundance, productivity and genetic, life history, and demographic characteristics between the supplemented and control streams by implementing a Before-After-Control-Impact (BACI) experimental design. Data collected from field samples and data from laboratory analyses (e.g., genetics, otolith microchemistry, scales) will be summarized, formatted, and checked for errors on an annual basis, and annual data reports will be produced. We will conduct annual project reviews that involve all collaborators and invited scientists from the region to assess progress. Formal statistical analyses will occur at each major milestone in the project (pre-supplementation, supplementation, and post-supplementation) to compare quantitative response variables among supplemented and control populations. Manuscripts for scientific peer-reviewed publications will be produced at the time each milestone is reached. Long Live the Kings will keep the public updated on the project's progress through the Hood Canal Steelhead Project web site (www.hoodcanalsteelhead.com), press releases, and other communications materials.

Ultimately, the success of the project will be judged by our ability to collect the necessary data in a reliable and systematic fashion, and to convey that data to the public, scientific, and management communities in a timely and readily understandable manner.

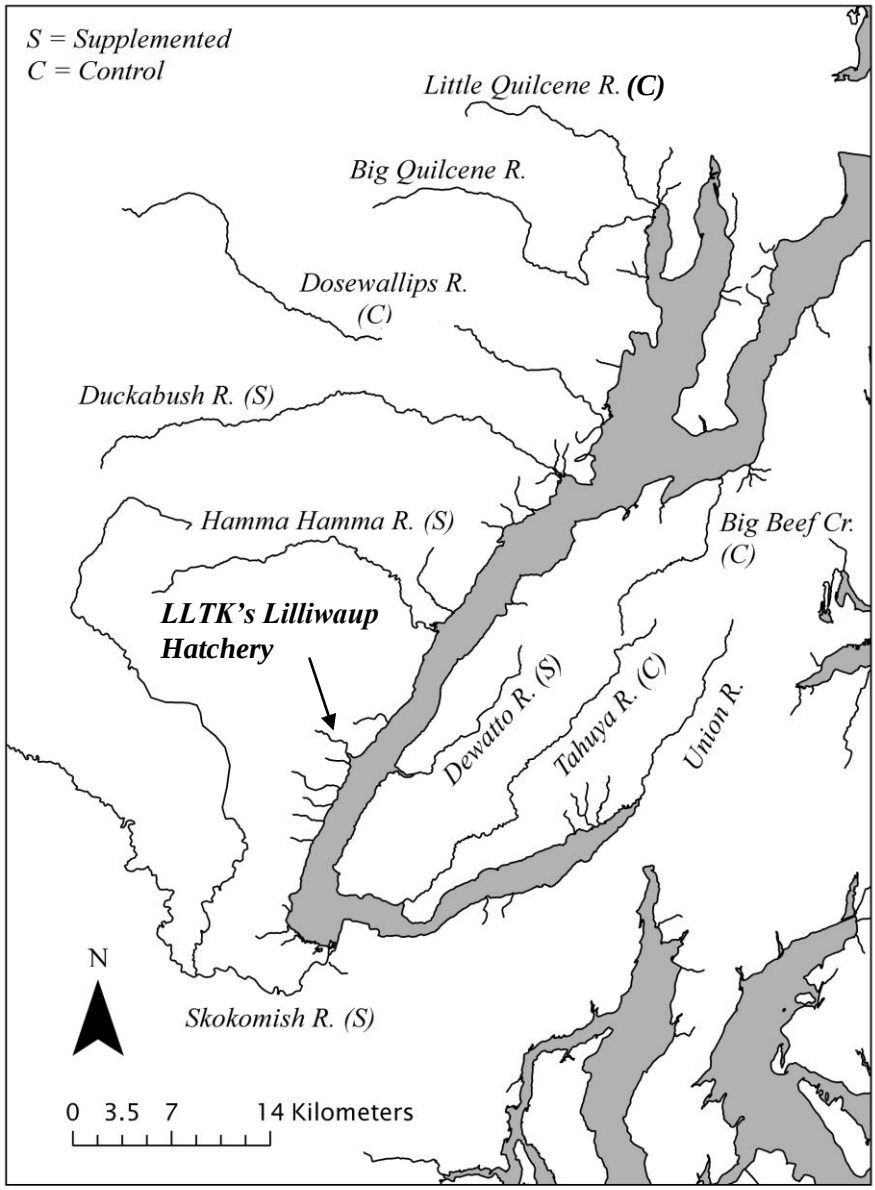
b. Identify who will conduct the monitoring

- Long Live the Kings
- WDFW
- NOAA Fisheries

c. Identify total funding needed to carry out specified monitoring tasks (Worksheet 1, Item k):

Data collection is performed by LLTK staff and contractors and is covered under project expenses in Worksheet 1 (i. Salaries, j. Materials and Supplies, and l. Other). LLTK spends approximately $20,000 annually for data compilation and communicating the progress and results of the entire project (roughly $6,000 for the Duckabush River for the period of the Title II funding request). The other agencies listed above perform the data evaluation and draft the scientific publications for the project. They spend approximately $131,000 annually for data compilation/evaluation for the entire Hood Canal Steelhead Project.

Attachment 4: Project Map



This map indicates the locations of the supplemented (S) and control (C) streams for the Hood Canal Steelhead Project. Post-supplementation monitoring continues on the Hamma Hamma River which was supplemented until 2008. Long Live the Kings' (LLTK) efforts are concentrated along the west coast of Hood Canal, working in the Duckabush, Little Quilcene, and Hamma Hamma rivers, and rearing fish at Lilliwaup Hatchery for the Duckabush and Dewatto rivers. LLTK occasionally surveys the Dosewallips River, which was considered a primary control stream until 2008 when it was deemed impractical to use as such given that its turbid conditions inhibit quality monitoring of redd abundance.